

REMARKS

The Invention

Applicants' invention is based on their isolation and characterization of the so-called SSE1 gene which, when inactivated, causes the shrunken seed phenotype.

Support for Claim Amendments

Support for the amendment to claim 1 is found, for example, on page 42, line 16. Support for the amendment to claim 8 is found, for example, in claim 9 (canceled herewith) and in the specification at page 1, line 9, page 8, lines 25-26, and page 24, lines 17-21. Support for the amendment to claim 23 is found, for example, claims 1 and 8. No new matter is introduced by these amendments.

The Office Action and Advisory Action

Claims 1, 3-13, and 15-26 are pending in this application. Claims 1, 3-13, and 15-26 stand rejected under 35 U.S.C. § 112, first paragraph. Claims 1, 3-13, and 15-26 stand rejected under 35 U.S.C. § 112, second paragraph. Claims 8, 11-12, 21, and 23-26 stand rejected under 35 U.S.C. § 102(b). Claims 8, 10-13, 15-19, and 21-26 stand rejected under 35 U.S.C. § 103(a).

Drawing Objections

Applicants request that the set of substitute drawings provided on November 21, 2002 be entered into the record.

Rejections Under 35 U.S.C. § 112, first paragraph

Claims 1, 3-13, and 15-26 were rejected under 35 U.S.C. § 112, first paragraph, for both lack of enablement and inadequate written description.

Applicants have now amended their claims to require either (1) an isolated nucleic acid molecule comprising a sequence encoding a polypeptide having at least 70% identity with the amino acid sequence shown in Fig. 2B (SEQ ID NO: 2) or (2) an isolated nucleic

acid molecule comprising a sequence encoding a polypeptide having that governs organelle biogenesis in a plant cell, wherein said isolated nucleic acid molecule hybridizes under low stringency conditions to the nucleic acid molecule comprising the cDNA of Fig. 2A (SEQ ID NO:1), wherein said low stringency conditions comprise: (i) hybridization at about 42 °C, 40% formamide, 0.1 mg/ml sheared salmon sperm DNA, 0.5% SDS, 5X SSPE, and 1X Denhardt's reagent; (ii) two washes at room temperature, 2X SSC, and 0.1% SDS; and (iii) two washes at room temperature, 0.5X SSC, and 0.1% SDS. The scope of applicants' claims are now limited to highly homologous sequences, and therefore necessarily structurally similar, to the disclosed sequences. In addition, applicants submit that the specification provides an adequate written description of the nucleic acid molecules required for use in the claimed method. Moreover, with the recitation of 70% identity with the amino acid sequence shown in Fig. 2B or specific hybridization conditions in the claims, no undue trial and error experimentation would be required to identify nucleic acid molecules encompassed by the claims. Accordingly, this rejection may be withdrawn.

No new matter has been added by any of these amendments, and applicants note, for the record, that the current claim amendments were made solely for the purpose of expediting prosecution. Applicants reserve the right to pursue all canceled subject matter in this or future related applications.

Rejections Under 35 U.S.C. § 112, second paragraph

Claims 1, 3-13, and 15-26 were rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness.

Claims 1, 3-9, and 23 were deemed indefinite in reciting the term "SSE." This term has been removed from the claims, and this basis for the rejection is now moot.

Claim 23, in the advisory action, was also deemed indefinite on the basis of reciting the phrase "based on." This phrase has been removed from the claims, and this basis for the rejection is now moot.

Claim 8 was deemed indefinite for its recitation of “low stringency” because those hybridization conditions were not specified. Claim 8, as amended, now recites specific low stringency hybridization conditions, and this rejection should be withdrawn.

Finally, in connection with the Office’s concern that the claims are indefinite because “hybridization and wash times are not specified,” applicants submit that this concern is unwarranted because a determination of such times involves only the application of well known and routine methods, and that those skilled in the art readily understand these methods and thus the meaning of the claims is clear. Applicants request reconsideration and withdrawal of this basis of the rejection set forth in the advisory action.

Rejections Under 35 U.S.C. § 102

Claim 21 stands rejected under 35 U.S.C. § 102(b) as anticipated by Akama *et al.* (Plant Cell Reports, 12:7-11, 1992). This claim has been amended according to the suggestions of the Examiner and this rejection may be withdrawn.

Claims 8 and 11-12 stand rejected under 35 U.S.C. § 102(b) as anticipated by Storozhenko *et al.* (FEBS Lett., 390:113-118, 1996). As amended, these claims now require isolating a polypeptide having at least 70% identity to the amino acid sequence depicted in SEQ ID NO:2, subject matter which has been deemed by the Office to be “free of the prior art.” Accordingly, this basis of the § 102 rejection should be withdrawn.

Claims 23-26 stand rejected under 35 U.S.C. § 102(b) as anticipated by Lee *et al.* (Mol. Gen. Genet., 252:11-19, 1996). As amended, these claims now require an expression vector that includes an isolated DNA molecule encoding antisense RNA based on a nucleic acid encoding a polypeptide having at least 30% identity to the amino acid sequence shown in Fig. 2B (SEQ ID NO:2). This basis of the § 102 rejection, in view of this amendment, should also be withdrawn.

Rejections Under 35 U.S.C. § 103(a)

Claims 8, 10-13, 15-19, and 21-26 stand rejected under 35 U.S.C. 103(a) over Lee *et al.* (*supra*), in view of Storozhenko *et al.* (*supra*). As is discussed above, these claims are now directed to subject matter that has been deemed to be free of the prior art, and this rejection may be withdrawn.

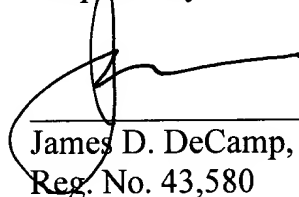
CONCLUSION

Applicants submit that the claims are in condition for allowance, and such action is requested.

If there are any charges or any credits, please apply them to Deposit Account No. 03-2095.

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Respectfully submitted,



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